

Remarks:

Reconsideration of the application is requested.

Claims 1-18 remain in the application.

In the section entitled "Drawings" on page 2 of the above-identified Office action, the drawings have been objected to under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims.

More specifically, the Examiner has stated that the sensors for recording and passing operating parameters to data processing elements (claims 6 and 7) must be shown or the feature(s) cancelled from the claim(s).

Fig. 5 has been amended to add a reference sign "30" for the electronic measuring elements which are described on page 23, line 6 to page 24, line 26 of the specification. The reference sign "30" has also been added to the corresponding part of the description.

In deference to the requirement in the section entitled "Specification" on page 2 of the above-identified Office action, a new title has been adopted which is clearly indicative of the invention to which the claims are directed.

In the section entitled "Claim Rejections - 35 USC § 112" on pages 2-3 of the above-identified Office action, claims 1-18 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1-18 have been rejected as being indefinite under 35 U.S.C. § 112 second paragraph.

More specifically, the Examiner has stated that the structure of the compensation elements for compensating for speed differences and positional errors or the steps of determining a difference in speed and a positional error of the printed sheet on the transfer cylinder between two printing unit groups is not provided (claims 1-4, 13 and 14).

The structure of the compensation elements is described in detail in the specification. The description on pages 23-24, especially concerning Fig. 5, shows all the elements that are necessary for performing the compensation between the two printing units. Not only the movable grippers are mentioned, it is also described how they can be moved, how and where the sensors are located, how the edge of a printed sheet is detected and so on. Applicants, therefore, believe that Fig. 5 and all paragraphs related to Fig. 5 in the specification

disclose the structure of the compensation elements in sufficient detail that the rejection under 35 U.S.C. § 112, first paragraph is not justified.

The Examiner has also stated that claims 1-18 are a functional recitation of a desired mode of operation without the recitation of structure to provide the desired operation.

Claims 1-18 clearly recite a structure, namely a printing machine with two printing unit groups that can be driven independently by at least two drive motors. In order to compensate speed differences and positional errors between the two independently driven printing units, compensation elements are provided that are assigned to the accepting printing unit group.

Please note that means-plus-function recitation is perfectly acceptable under US patent practice. An element recited in means-plus-function form should be constructed to cover the corresponding structure described in the specification and equivalents thereof (see 35 USC 112, paragraph 6).

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Should the Examiner find any further objectionable items,

counsel would appreciate a telephone call during which the matter may be resolved.

In the section entitled "Claim Rejections - 35 USC § 102" on pages 3-4 of the above-identified Office action, claims 1-5 and 11 have been rejected as being anticipated by Grützmacher et al. (US Pat. No. 5,481,971) under 35 U.S.C. § 102(b). In the section entitled "Claim Rejections - 35 USC § 103" on pages 4-5 of the above-identified Office action, claims 6 and 7 have been rejected as being unpatentable over Grützmacher et al. under 35 U.S.C. § 103(a); claims 8-10 and 12-18 have been rejected as being unpatentable over Grützmacher et al. in view of Fricke et al. (US Pat. No. 5,390,601) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claims 1-4 call for, inter alia:

the compensation elements being assigned to a printing unit group which is an accepting printing unit group, in order to compensate for transfer errors.

Claim 13 calls for, inter alia:

determining a difference in speed between two decoupled printing unit groups, and displacing a gripper system parallel to the surface of a cylinder during the sheet transfer so as to compensate thereby for the difference in speed between the printing unit groups on a first transfer cylinder of an accepting printing unit group.

The Grützmacher et al. and Fricke et al. references are owned by the corporate assignee of the instant application and Applicants are therefore very familiar with these references.

Grützmacher et al. show two mechanically decoupled printing units with compensation elements having a control circuit controlling two drive motors, requiring that both printing units are adjusted by the control circuit to overcome synchronization problems.

In contrast, according to the invention of the instant application, only the sheet accepting printing unit is used to compensate any errors occurring during the transfer of sheets between both printing units.

Clearly, Grützmacher et al. do not show "the compensation elements being assigned to a printing unit group which is an accepting printing unit group, in order to compensate for

transfer errors", as recited in claims 1-4 of the instant application.

Claims 1-4 are, therefore, believed to be patentable over the art and since claims 5-12 are ultimately dependent on claim 4, they are believed to be patentable as well.

The gripper system shown in Fricke et al. is merely a conventional gripper system lacking all the features of the invention of the instant application. The gripper system of Fricke et al. is not movable in the circumferential direction of the sheet guiding cylinder as shown in Fig. 5 of the instant application. Without the ability to move the gripper system in the circumferential direction, it is impossible to adjust sheets in order to overcome synchronization problems. The use of a conventional gripper system like the one disclosed in Fricke et al. would not solve the problem to be soled by the invention of the instant application.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 13. Claim 13 is, therefore, believed to be patentable over the art and since claims 14-18 are ultimately dependent on claim 13, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-18 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,



For Applicants

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Marked-Up Version of the Amended Paragraphs in the
Specification:

Change the title of the invention to:

-- [TRANSFER ERROR COMPENSATION IN A] PRINTING MACHINE WITH
COMPENSATION ELEMENTS FOR COMPENSATING SPEED DIFFERENCES AND
TRANSFER ERRORS BETWEEN PRINTING GROUPS AND METHOD OF
TRANSFERRING PRINTED SHEETS IN SUCH A PRINTING MACHINE --

Change the paragraph starting on page 23, line 6 and ending on
page 24, line 26 to read as follows:

Fig. 5 shows a gripper system 18 on a transfer cylinder 13.
Here, the gripper system 18, arranged in a cylinder gap or
channel 24 extending axially in a sheet-carrying transfer
cylinder 13 of the printing machine 1, is arranged on a slide
25 which has an angular cross section. At the upper end of an
upwardly directed slide leg, there is disposed a gripper pad
26 for a gripper 27 of the gripper system 18 arranged on the
slide 25. The horizontally extending leg 28 of the slide 25 is
arranged by rolling-contact bearings on a non-illustrated
bearing plate which can, in turn, move on rolling-contact
bearings in the axial direction of the transfer cylinder 13.
At both axial ends of the transfer cylinder 13, actuators are
connected to the slide 25 and are activatable counter to the
action of a spring which is braced by one end against the

horizontal leg 28 of the slide 25 and by the other end against the wall of the cylinder gap or channel 24 formed in the transfer cylinder 13. The actuators are movable perpendicularly to the plane of the drawing, counter to the action of a spring. Arranged on the surface of the gripper pad 26 are electronic measuring elements 30, for example linear CCDs which can be illuminated, for registering the leading edge of the printed sheet, and the measuring elements supply, via a computer, control pulses for the actuators for the positional correction of the printed sheet in the conveying direction. For lateral sheet alignment, electronic measuring elements 30, for example likewise linear CCDs which can be illuminated, are arranged at least at one axial end of the transfer cylinder 13. The latter linear CCDs can be set in a conventional manner, as a function of the format, and, via one of the data processors of the control device 14, as shown in Fig. 1, control the actuators for the displacement of the gripper system 18 on the carriage in the direction of the cylinder axis. By using a desired or nominal/actual comparison, the measured values from the electronic measuring elements 30 on the gripper pad 26 are used by the control device 14 to obtain control pulses for the actuators for the positional correction in the conveying direction of the printed sheet and, by the electronic measuring elements 30 at the axial cylinder end, to obtain control signals for the lateral positional correction of the printed sheet. During

these correctional movements, the printed sheet is held securely in the gripper system 18, so that the in-register transfer of the printed sheet to the gripper system of the subsequent second cylinder 19 of the printing unit group III is assured. Only after the printed sheet has been released by the gripper system 18 does the slide with the gripper system 18 arranged thereon return to the zero position as a result of the spring action.

Change the paragraph starting on page 19, line 16 and ending on page 20, line 3 to read as follows:

For this purpose, the motors 7 and 9 are controlled by a control device 14. The task of the control device 14 is to control the motors 7 and 9 in accordance with a prescribed desired or nominal speed so that the prescribed angular difference between the two printing unit groups II and III is not exceeded. The maximum difference depends upon the dynamics of the drives. In addition, the task of the control device 14 is to determine the operating parameters at the instant of time that the printed sheet transfer occurs and to communicate the parameters to the compensation elements 15. The compensation elements 15 are not shown as such in [the drawings] Fig. 1 and are assigned to a gripper system 18 on the transfer cylinder 13. According to the invention, the compensation elements 15 serve to compensate for the transfer error.